CSE490T/590T
Intellectual Property Law for Engineers

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Course Overview

- Who am I?
- Who are you?
- Why are we here?
- Where are we going?
- How are we going to get there?

Course Topics (Proposed)

1. (Today) Introduction to course; patent overview, how to read a patent
2. With PTC (BIOEN 504) -- Survey of intellectual property law
3. Patent Process & Lifecycle, patent preparation & prosecution
4. Claim drafting
5. Interpreting claims
6. Noninfringement, invalidity, designing around
7. Copyright & open source software
8. Copyright continued
9. Open
10. Open

Intellectual Property

- What is intellectual property?
- What is property?
- Why should you care?
- Primary legal regimes for protecting IP?
  - Patent
  - Trademark
  - Copyright
  - Trade Secret

Patents – Legal Basis

- Constitutional basis in Art. I, Sec. 8, Clause 8:

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries

- Patent Act: Title 35 of US Code
- Code of Fed. Regulations: Title 37

Patent Basics

- Subject matter: process, machine, manufacture, or composition of matter (or improvement thereof)
- Conditions: new, useful, non-obvious
- Exclusive rights: make, use, sell, offer for sale, import
- Duration: 20 years (from filing)

Patent Policy

- Quid pro quo:
  - Inventor discloses invention and enriches public knowledge
  - Government grants a limited monopoly
- Idea is to encourage investment in inventive activity, by enabling inventors to exploit fruits of their labor
- Getting scope/duration right:
  - Too broad/long → patent stifles innovation
  - Too narrow/short → system under-incentivizes innovation

Patent Policy - Limitations

- Patents have a limited duration: 20 years from filing
- Scope is limited in various ways:
  - Some subject matter is off limits: laws of nature, abstract ideas, natural phenomena
  - Inventions must be new
  - Inventions must be non-obvious to one having skill in the art at the time the invention was made
- The scope of an individual patent is <u>defined by its claims</u>
  - The claims determine validity and infringement

Understanding Patents

- Patents are commonly misunderstood in the popular press
- Typical reading: read the first page of a patent or patent application, then opine on the terrible consequences that follow

- A core goal of this course: help you <u>critically read and understand</u> a patent

Getting a Patent

- Specification
  - Abstract
  - Background
  - Written Description
  - Claims
- Drawings

- This structure is the same for an application and an issued patent.

Patent No. 6,865,843

Claims Define the Invention

- A claim is a single sentence describing the invention:

An apparatus for cutting a lawn, comprising:

    an electric lawn mower;

    a solar panel configured to provide power to the electric lawn mower; and

    a motion controller configured to autonomously navigate the electric lawn mower about a lawn.

The '843 Patent

1. A portable electrical mouse trap for capturing and killing a mouse, comprising:

a housing in the shape of a cat having a head with a pair of eyes and a mouth defining an interior cavity, the mouth forming an entrance to the interior cavity;

a primary motion sensor near the entrance to the interior cavity for selectively closing the mouth;

a retractable primary gate in electrical communication with the primary motion sensor;

a collection chamber within the interior cavity for holding a plurality of captured mice;

a reservoir of a mouse-attracting fragrance that automatically dispenses within the interior cavity;

a secondary motion sensor near an entrance to the collection chamber;

a retractable secondary gate in electrical communication with the secondary motion sensor; and

a vacuum source in communication with the collection chamber, wherein the primary motion sensor and secondary motion sensor detect the presence of a mouse inside the interior cavity and activate the vacuum source to draw the mouse into the collection chamber and close the secondary gate.

Lifecycle of a Patent Claim

- File a patent application, including a specification, figures, and at least one claim
- Examiner rejects claims over prior art
- Modify claims to define the invention over the cited prior art
- If successful, patent will issue with the modified claims

Understanding Patents

Patents are two-faced:

1. To understand the legal effect of a patent (i.e., what is invented, what is forbidden), read its claims.
2. To understand its "teachings" or effect as prior art, read the figures and written description

Reading for Legal Effect

- Read the title & abstract
- Scan the figures
- Read the first claim
- If the claim doesn't make any sense on its own, start reading the written description, using the figures as your guide

- Every word of the claim matters
- The more words, the narrower the claim

Google Patent (No. 6,285,999)

1. A computer implemented method of scoring a plurality of linked documents, comprising:

obtaining a plurality of documents, at least some of the documents being linked documents, at least some of the documents being linking documents, and at least some of the documents being both linked documents and linking documents, each of the linked documents being pointed to by a link in one or more of the linking documents;

assigning a score to each of the linked documents based on scores of the one or more linking documents and processing the linked documents according to their scores.

The '999 Patent: Figure 2
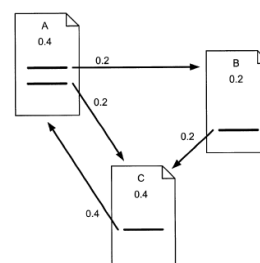
Intel Patent (No. 3,821,705)

1. A general purpose digital computer comprising:
a central processor disposed on a first semiconductor chip;
a plurality of bidirectional data bus lines;
at least a separate first and second semiconductor memory chip each defining a memory and each including a chip decoding circuit for recognizing a different predetermined code on said bidirectional data bus lines and for activating a portion of said memory upon receipt of said predetermined code, said data bus lines interconnecting said processor and said first and second memory chips for communicating said different predetermined codes from said processor to at least one of said first and second memory chips and for communicating data signals for one of said first and second memory chips to said processor;
whereby said processor may communicate signals to said first and second memory chips and said decoding circuits shall determine which memory is being addressed.

The '705 Patent: Figure 1